



(11) (21) (C) **2,174,816**

(22) 1996/04/23

(43) 1996/10/25

(45) 1998/10/20

(72) DeCoste, James, US

(72) Lesniak, Joseph, US

(72) Riegler, Barbara, US

(72) Skarra, Leslie, US

(73) AZTECA FOODS, INC., US

(51) Int.Cl.⁶ A21D 13/00, A23L 1/164

(30) 1995/04/24 (08/426,955) US

(54) **TORTILLAS POSSEDANT UNE PLUS GRANDE FLEXIBILITE
ET METHODE D'OBTENTION**

(54) **TORTILLAS HAVING INCREASED FLEXIBILITY AND
PROCESS THEREFORE**

(57) Cette invention concerne l'emploi de fibres longues et fines dans la confection de tortillas affichant une souplesse améliorée.

(57) The present invention relates to using long slender fibers to provide tortillas exhibiting increased flexibility.



SPECIFICATION

(Case No. 95,549)

**TORTILLAS HAVING INCREASED
FLEXIBILITY AND PROCESS THEREFORE****BACKGROUND OF THE INVENTION**

One of the key quality attributes of tortillas is flexibility of the tortilla. Flexible tortillas are highly desired by consumers because of their texture, moistness and flavor. As tortillas lose flexibility, they become unacceptable to consumers.

Further, flexibility is an indicia of freshness. Tortillas that have decreased flexibility are perceived as being stale. As tortillas age they lose flexibility. This presents a significant problem for tortilla manufacturers, because it severely limits the products' shelf-life.

Thus, the tortilla industry is continually seeking ways to 1) increase tortilla flexibility, thereby improving the overall quality of the product; and 2) diminish or delay loss of flexibility thereby extending the products' shelf-life.

Many of the tortilla industry's efforts to generally retard staling have involved chemical additives. See e.g., U.S. Pat. Nos. 3,672,912 ("Tortilla and Process Using Water Soluble Edible Borate or Aluminate"); 3,690,893 ("Tortilla and Process Using Epichlorohydrin"); 3,694,224 ("Tortilla and Process Using Polycarboxylic Acids and Their Anhydrides"); 3,709,696 ("Tortilla and Process Using Hydrophilic Inorganic Gels"); 3,687,685 ("Tortilla and Process Using Phosphorus Oxychloride"); 3,859,449 ("Tortilla and Process Using Acetic and Propionic Acids"); 3,653,915 ("Tortilla and Process Using Mono- or Diglyceride"); and 3,655,385 ("Tortilla and Process Using Edible Hydrophilic Gum").

- 2 -

Unlike the past attempts to retard staling, the present invention is directed specifically toward enhancing and extending flexibility, and utilizes a long slender fiber, such as certain types of oat hull fiber, to achieve that objective.

DETAILED DESCRIPTION OF THE INVENTION

The present invention is directed toward providing tortillas exhibiting increased flexibility and having less loss of flexibility over time. This invention achieves the above objectives without resort to chemical additives and without
5 complex formulation changes. Rather, the present invention involves simply adding a fiber that is perceived by consumers as a natural, wholesome ingredient.

Specifically, this invention comprises utilizing long slender fibers to increase tortilla flexibility and to diminish the loss of tortilla flexibility. An example of a commercially available long slender fiber is Opta™ Oat Fiber 770
10 and 780.

Long slender fibers, such as Opta™ Oat Fiber 770, have recently been marketed for use in ice cream cones to decrease breakage, and for use in tortilla chips to similarly decrease breakage. The above applications are considered "dry systems". Long slender fibers, such as the Opta™ oat hull fiber, have not,
15 however, been used, nor recommended for use, in a "wet system". Tortillas are considered to be a "wet system". Further, long slender fibers, such as Opta™ oat hull fiber, have not been known to be used as an ingredient to enhance flexibility. Thus the present invention, using long slender fibers in a wet system (tortillas), to enhance flexibility, has achieved unexpected results.

As described above, much of the prior art involves chemical additives. Unlike the prior art, the present invention, it is believed, obtains enhanced flexibility by changing the physical characteristics of the tortilla. Fibers that achieve the desired result are long and slender, that is they are at least two or three times longer than wide. Further, when viewed microscopically, the fibers
20 appear substantially long and slender, as opposed to fibers that appear irregularly round, or that appear as short rods. It is believed that the long slender fibers "knit" together, thereby altering the physical structure of the tortilla.
25

It is also noted that suitable fibers have a relatively low bulk density. For example Opta™ oat hull fiber has a bulk density of approximately 8--9 pounds per cubic foot. Another potentially suitable, commercially available, fiber is Solka Floc™, which has a bulk density of approximately 10--14 pounds per cubic foot. By contrast, typical white wheat flour has an approximate bulk density of 28 pounds per cubic foot.

The present invention also yields a dough that is compatible with processing equipment and is thus suitable for commercial applications. In contrast, some of the prior art additives (e.g. gums or glutens) yield a dough that is difficult to process in commercial applications.

Consequently, this invention achieves the long sought objective of enhanced tortilla flexibility simply by adding one ingredient (a long slender fiber) that consumers will consider to be wholesome. Further, unlike the prior art, the invention achieves its objective by altering the structure of the tortilla, and provides a dough that is desirable for use in commercial applications.

PREFERRED EMBODIMENT

Loss of flexibility has been a very significant problem with corn tortillas. Thus, this invention is particularly valuable in producing corn tortillas. In the preferred embodiment of the invention, between 0.5 and 10% Opta™ Oat Fiber 770 is incorporated into a standard corn tortilla formulation. The precise amount to be used will be obvious to one of skill in the art, dependent upon the formula used, taste and other quality objectives sought, and economics. The resulting corn tortilla is significantly more flexible than those made without the long slender fiber, and retains its flexibility much longer than those made without the long slender fiber.

In light of the above disclosure, it is expected that other variations and applications may be obvious to those skilled in the art.

WHAT IS CLAIMED IS:

1. A tortilla having a long slender fiber as one of its ingredients, said tortilla thereby exhibiting enhanced flexibility attributes.
2. The tortilla of claim 1, wherein said tortilla is a corn tortilla.
- 5 3. The tortilla of claims 1 or 2, wherein said long slender fiber is Opta™ Oat Fiber.
4. The tortilla of claims 1, 2 or 3 wherein said long slender fiber has a bulk density less than 20 pounds per cubic foot.
- 10 5. A process for making tortillas exhibiting enhanced flexibility wherein a long slender fiber is utilized as an ingredient.
6. The process of claim 4 wherein said tortillas are corn tortillas.
7. The process of claims 4 or 5, wherein said long slender fiber is Opta™ Oat Fiber.
- 15 8. The process of claims 5, 6 or 7, wherein said long slender fiber has a bulk density less than 20 pounds per cubic foot.

**Smart & Biggar
Ottawa, Canada
Patent Agents**

Sorry, there are no drawings for patent number 2174816.

Last Modified: 2001/01/03

[Important notices and disclaimers](#)
[Privacy Statement](#)

Canada
<http://strategis.gc.ca>